Chapter Eight: Conclusion, Summary and Signatures

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DO&G is required by AS 38.05.133, and AS 38.05.035(e) and (g) to determine whether an exploration license serves the state's best interests. As the director of DO&G, my responsibility is to make that determination for the Nenana Basin Exploration License. In making this decision for the final finding, I balanced the reasonably foreseeable positive and negative effects to determine whether the potential benefits exceed the potential negative effects and whether issuing the Nenana Basin Exploration License is in the best interests of the state.

In this final finding analysis, DO&G considered the reasonably foreseeable potential effects, both negative and positive, that this license could have on fish, wildlife, and human users of these resources, on the local economy and well being, and on state revenue. DO&G analyzed the available socioeconomic, and environmental data submitted by ADF&G and other government agencies. The division also considered the cumulative effects of development in the area.

A. Reasonably Foreseeable Effects of Exploration Licensing and their Mitigation

The discussion throughout this finding and the record reflect the analysis of the issues. Below is a summary of this analysis.

1. Statewide Fiscal Effects

The primary source of state revenues is North Slope oil production. In FY 2001 oil and revenues comprised approximately 82 percent of the state's general fund unrestricted revenue. North Slope fields hold 98 percent of the state’s known oil reserves and 90 percent of the state’s known gas reserves. The remaining state oil and gas reserves are found in Cook Inlet fields. However, oil and gas reserves are finite resources and North Slope and Cook Inlet production is declining. Regardless of the price of crude oil, general fund receipts will continue to decline (see Chapter Five). The discovery and development of smaller, but still significant, oil and gas fields may temper the anticipated decline in revenues to the state treasury. Additionally, new discoveries, particularly natural gas, are needed to meet growing local energy demand.

Most revenues generated from oil and gas activities go into the state’s general fund, while some are set aside for the state Permanent Fund. Many funds, including oil and gas property taxes, are passed directly through to borough and municipal governments. Statewide, Alaskans receive direct and indirect benefits derived from General Fund spending. General Fund receipts are allocated to local governments and all state agencies, including the University of Alaska. Funds can be passed directly to local governments through programs, while others are authorized specifically by the state legislature.

By issuing this exploration license, there will be a one-time increase in state income from the $1 per acre licensing fee. The potential for additional revenue from rentals, royalties and taxes is unpredictable, because at the time the license is issued no one knows what reserves may be found in the area. However, compared with the other interior sedimentary basins, the Nenana basin appears to be the most favorable for containing economic gas reserves.

As exploration takes place, the license would add jobs to the state and regional economy. These jobs would not be limited to the petroleum industry but would be spread throughout the trade, transportation, service, and construction industries. The number of jobs produced would depend on whether commercial quantities of gas are discovered, and whether projects to develop this resource go forward. Discovery and development of commercial quantities of natural gas as a result of an exploration license in the study area would bring economic benefits to the region in the form of additional employment opportunities and lower energy costs. Additionally, industry investment in environmental studies, planning and design activities, materials acquisition, facility construction, seismic surveys, drilling, transportation, and logistics contribute to the well being of both the state and local economy.

2. Effects on Municipalities and Communities

License-related activities may include project development in already developed areas and in areas that do not have an existing infrastructure, roads or utility right-of-ways. There would be no direct (non-fiscal) impact to the Fairbanks North Star Borough or the Denali Borough or community operating expenses, aside from normal planning and zoning responsibilities. Development projects would provide revenue to the boroughs and improve infrastructure. There may be additional employment opportunities during the exploration phase and more during development and production phases. The long-term employment benefits to boroughs and local communities would depend on the subsequent production of commercial quantities of gas, the hiring of local residents, and use of local service providers. Residents may have access to natural gas, a lower cost alternative to fuel oil and electricity for heating. Local utilities may be able to generate electricity from natural gas, which is more efficient, less expensive, and less polluting than coal.

Local residents' use of the area requires access to it, and any activity, facility or structure that restricts access can have an adverse impact on local residents. Other effects include disturbance due to increased air traffic, drilling and construction machinery noise and loss of privacy due to the presence of project workers and construction camps. The extent of these effects depends on the size of development projects and the proximity of facilities, and utility, pipeline, and transportation corridors to the potentially affected community. Most disturbance effects would be temporary during development and construction. Other financial and infrastructure impacts would be more long term. Employment effects could be both short- and long-term.

B. Cumulative Effects and their Mitigation

1. Effects on Fish and Wildlife Habitats, Populations, and Uses

Fish: Potential impacts in the exploration phase include degradation of streambanks and overwintering areas due to erosion and sedimentation. Potential impacts in future phases include habitat loss due to gravel displacement and facilities siting; interference with migration and movement from onshore structures and impoundments; and fish kills due to industrial water use, gas blowouts, oil spills, unregulated discharge, and seismic activities. Long-term impacts may include habitat improvement due to restoration and rehabilitation of impacted sites.

Title 16 of the Alaska Statutes regulates all activities that may affect anadromous fish streams or that may result in blockage of fish passage. Mitigation measures specify that alteration of riverbanks and use of in-stream equipment is prohibited. Bridges or non-bottom-founded structures will be required for crossing fish spawning and important rearing habitats. Discharge of drilling muds and cuttings into lakes, streams, rivers, and high value wetlands is prohibited. Disposal of produced waters will be by subsurface disposal techniques. Unless authorized by a state permit, disposal of wastewater into freshwater bodies is prohibited. Gravel mining

within an active floodplain is prohibited unless no feasible or prudent alternative exists. Removal of water from fishbearing rivers, streams, and natural lakes shall be subject to prior written approval by DMLW and ADF&G. Water intake pipes must be designed to prevent harm to fish. Use of explosives is prohibited in open water areas of fishbearing streams and lakes.

Birds: Potential impacts include habitat loss, barriers to movement, disturbance during nesting and brooding, gas blowouts, and oil spills. In order to minimize the possibility of these impacts, the following mitigation measures will apply. The siting of new facilities in key wetlands and sensitive habitat areas may be restricted. Surface entry may be prohibited within ¼-mile of trumpeter swan nesting sites during summer. The siting of permanent facilities within ¼-mile of known nesting sites may be prohibited.

Moose: Alteration or loss of moose calving and wintering habitat could induce or contribute to a decline in moose populations. In order to minimize the possibility of these impacts, the following mitigation measures will apply. Exploration facilities, including roads and pads, must be temporary and constructed of ice, though the construction of winter roads may also be allowed. Exceptions, including the use of gravel may be allowed. Wherever possible, pipelines must use existing transportation corridors and be buried where soil and geophysical conditions permit. In areas where pipelines must be placed above ground, pipelines must be sited, designed, and constructed to allow free movement of moose and other terrestrial animals.

Brown Bear and Black Bear: During exploration, these bear species are most likely to be affected by disturbances during denning. During development and production, human activity may attract foraging bears to facilities, especially refuse disposal sites. This may pose a threat to human safety and the potential need to shoot “problem” animals. Gas blowouts could disturb or displace bears. Oil spills could contaminate some local food sources. Mitigation measures specify that garbage must be incinerated. Facilities may not be sited within 500 ft. of fishbearing waterbodies or within ½-mile of major rivers. Permanent roads will not be approved for exploration activities. Exploration facilities, including roads and pads, must be temporary and constructed of ice, though, the construction of winter roads may also be allowed. Exceptions, including the use of gravel may be allowed. For projects in close proximity to areas frequented by bears, licensees must prepare and implement bear interaction plans to minimize conflicts between bears and humans. Prior to commencement of any activities, bear den location information must be obtained by ADF&G and occupied dens avoided by ½-mile.

2. Effects on Subsistence

Effects on subsistence activities in the study area could include increased access to limited resources by competing users, land use limitations and restrictions on access to subsistence, and the immediate effects of oil spills. Potential benefits from oil and gas activity include a potential increase in wage earning opportunities to supplement subsistence activities. Workers must be educated about the land and its people. The licensee, including any contractors and subcontractors, must train employees about the environmental, social, and cultural values of the people of this area. Employees must understand how to avoid damaging biological and archaeological resources. They should have an increased sensitivity and understanding of community values, customs, and lifestyles of local residents. Public access to, or use of, the licensed area may not be restricted except within the immediate vicinity of drill sites, buildings, and other related structures. No license facilities or operations may be located so as to block public access to or along navigable and public waters as defined by state law. During review of plans of operation or development, DO&G will work with other agencies and the public to assure that potential conflicts are identified and avoided. License related activity will be restricted if the ADNR commissioner determines it is necessary to prevent unreasonable conflicts with local subsistence harvests. Plans of operation submitted for review and approval must describe the licensee's efforts to communicate with local communities, and interested local community groups, if any, in the development of

such plans. Additional, site-specific and project-specific mitigation measures may be imposed as necessary to protect subsistence access.

3. Effects on Cultural and Historic Resources

There are more than 31 known historic and archaeological sites within the study area and the potential for the discovery of additional sites is high. To prevent damage and insure preservation, an inventory of prehistoric, historic, and archeological sites must be conducted prior to the construction or placement of any structure, road, or facility. The inventory must include consideration of literature provided by local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. In the event any site, structure, or object of prehistoric, historic, or archaeological significance is discovered during license operations, the licensee must immediately report such findings to the Director. These measures will insure these resources are protected and preserved. Additionally, state laws prohibit the removal of historic and cultural resources. Violators are subject to criminal (misdemeanor) penalties and civil penalties, including fines up to $100,000.

C. Specific Issues Related To Oil And Gas Exploration, Development, Production, and Transportation

1. Geophysical Hazards

The primary geophysical hazards within the study area include earthquakes, faulting, seasonal flooding, and sediment hazards. These geophysical hazards could impose constraints to exploration, production, and transportation activities and should be considered prior to any siting, design, or construction of facilities. Structures in the study area must be built to meet or exceed the Uniform Building Code requirements for zone 4, areas of high earthquake probability. Pre-development planning should include surveys of spring break-up activity, as well as flood-frequency analyses. Structural failure can be avoided by proper facility setbacks from rivers and main tributaries. Containment dikes and berms can be installed to reduce flood damage. Mechanisms for blowout prevention and well control must be employed in the event overpressured shallow gas deposits are encountered.

2. Likely methods of Transportation

Elevated or buried flow, gathering, and common carrier pipelines would carry oil or natural gas from wellheads to processing centers. Elevated pipelines can restrict wildlife movements, especially if accompanied by a road with regular vehicle traffic. Buried pipelines have little impact on wildlife, but cannot be visually inspected and spill response is more difficult. Elevated oil pipelines are typically used in Alaska to prevent heat transfer from the hot oil in the pipeline to frozen soils, since heat would degrade the permafrost. Elevated pipelines are easy to maintain and visually inspect for leaks. However, mitigation measures require that pipelines be designed and constructed to allow free movement of moose and other terrestrial animals.

Gas pipelines are generally buried since there is not a heat transfer or spill problem. Under Mitigation Measure 8, wherever possible, pipelines must utilize existing transportation corridors and be buried where soil and geophysical conditions permit. Buried pipelines are feasible as long as the integrity of the frozen soils is maintained, but buried pipe is more difficult to monitor and maintain and can result in some habitat loss from

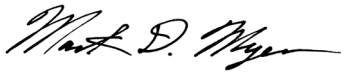
gravel fill. On the other hand, buried oil pipelines are sometimes not feasible from an engineering standpoint because of the thermal instability of fill and underlying substrate.

D. Summary and Signatures

No activity may occur without proper authorization from the appropriate permitting agencies. When specific activities are proposed, more detailed information such as site, type, and size of facilities will be known, in addition to the historical project data. Except for some very limited types of proprietary information, permit applications are public information and most permitting processes include public comment periods. DO&G will give public notice for any plans of operation for development. Additional terms may be imposed in any subsequent permits when applied for if additional issues are identified at that time.

Developing the state's petroleum resources is vital to the state economy and the well being of its citizens. With the mitigation measures presented in this final finding imposed on licenses and plans of operation, and additional project-specific and site-specific mitigation measures imposed in response to specific proposals, the petroleum resources of the study area can most likely be explored and developed without significantly affecting fish and wildlife populations or traditional human uses. The state has sufficient authority from general constitutional, statutory and regulatory empowerments, the terms of the license agreement, and plan of operations permit terms to ensure that licensees conduct their activities safely and in a manner that protects the integrity of the environment and maintains opportunities for subsistence uses.

On the basis of the facts and issues presented at this time, the foregoing findings, applicable laws and regulations, and the documents reviewed during preparations of this finding, I conclude that the potential benefits of the exploration license, as conditioned, outweigh the possible adverse impacts, and that this Nenana Basin Exploration License will best serve the interests of the state of Alaska.



Mark D. Myers August 22, 2002
Director

I concur with the director that the Nenana Basin Exploration License is in the best interests of the state.

Pat Pourchot August 22, 2002
Commissioner

This Best Interest Finding is a final administrative decision of the department. A person who is aggrieved by this finding may request the commissioner to reconsider the decision under AS 35.05.035(i) and (j). To be eligible an appellant must have meaningfully participated in the process to develop the finding by submitting written comments during the prescribed comment period. A request for reconsideration must be received by Pat Pourchot, Commissioner, Department of Natural Resources, 550 W 7th Avenue, Suite 800, Anchorage, Alaska 99501, or received by fax at 1-907-269-8938 by 5:00 p.m. (local time), September 11, 2002. If the commissioner fails to act on the request for reconsideration by September 23, 2002, the request is considered denied.

A denial of a request for reconsideration is the final administrative decision for purposes of appeal to Superior Court. A person may appeal the Final Best Interest Finding to Superior Court only if the person was

eligible to request, and did request, an administrative reconsideration of the finding by the commissioner. An appellant must initiate an appeal to the Superior Court within 30 days from the date of denial of that reconsideration or from the date of distribution of the denial decision, in accordance with the rules of court and to the extent permitted by applicable law.